CERTIFICATE OF ANALYSIS Grade of Product: EPA Protocol

Airgas Specialty Gases

1075 Cinclare Drive Port Allen, LA 70767 225.388.0900

FAX: 225.388.0959 www.airgas.com

Part Number:

E02Ni99E15A0138

CC14644

Cylinder Number: Laboratory:

ASG - Port Allen - LA

PGVP Number

Gas Code:

B42012

APPVD

Reference Number:

ber: 83-124312941-1

Cylinder Volume:

144 Cu.Ft.

Cylinder Pressure:

2015 PSIG

Valve Outlet:

350

Analysis Date:

Apr 27, 2012

Expiration Date: Apr 27, 2015

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed. Analytical Methodology does not require correction for analytical interferences. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this collibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.

Do Not Use This Cylinder below 150 psig.i.e.: Mega Pascal

			ANAL	YIICAL RESUL	rs	
Component		Requested		Actual	Protocol	Total Relative
		Concer	itration	Concentration	Method	Uncertainty
CARBON	MONOXIDE	2500 PP	M	2472 PPM	G1	+/- 1% NIST Traceabie
NITROGE	EN	Balance		•	44	
<u></u>	A STATE OF THE STA	C	ALIBRA	ATION STANDA		
Туре	Lot ID	Cylinder No	Con	centration		Expiration Date
NTRM	00052503	SG9160725BAL	1985	PPM CARBON MONOXI	DE/NITROGEN	Apr 15, 2012
		A	NALY	TICAL EQUIPMI	ENT	
Instrume	ent/Make/Model		Anal	ytical Principle		Last Multipoint Calibration
DH3CO			NonDispersive Infrared		Apr 02 2012	

Triad Data Available Upon Request

Notes:

Approved for Release

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CERTIFICATE OF ANALYSIS Grade of Product: EPA Protocol

Airgas Specialty Gases

1075 Cinclare Drive Port Allen, LA 70767 225.388.0900 FAX: 225.388.0959

www.airgas.com

Part Number:

E02NI99E15A0138

Reference Number: 83-124312941-1

Cylinder Number:

CC22326

Cylinder Volume:

144 Cu.Ft.

Laboratory:

ASG - Port Allen - LA

Cylinder Pressure:

2015 PSIG

PGVP Number:

B42012

Gas Code:

Valve Outlet:

350

APPVD

Analysis Date:

Apr 27, 2012

Expiration Date: Apr 27, 2015

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed. Analytical Methodology does not require correction for analytical interferences. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.

Do Not Use This Cylinder below 150 psig.i.e. 1 Mega Pascal

ANALYTICAL RESULTS						
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty		
CARBON MONOXIDE	2500 PPM	2480 PPM	G1	+/- 1% NIST Traceable		
NITROGEN	Balance					

		C	CALIBRATION STANDARDS	
Туре	Lot ID	Cylinder No	Concentration	Expiration Date
NTRM	00052503	SG9160725BAL	1985PPM CARBON MONOXIDE/NITROGEN	Apr 15, 2012
		· A	ANALYTICAL EQUIPMENT	
Instrument/Make/Model			Analytical Principle	Last Multipoint Calibration
DH3CO			NonDispersive Infrared	Apr 02, 2012

PARR Prec/CAL

Triad Data Available Upon Request

Notes:

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Page 1 of 83-124312941-1



Airgas Specialty Gases

12722 South Wentworth Avenue

Chicago, IL 60628

(773) 785-3000 Fax: (773) 785-1928

www.airgas.com

Part Number:

E02NI99E15A0083

Reference Number:

54-124341745-1

Cylinder Number:

CC213280

Cylinder Volume:

144 Cu.Ft.

Laboratory:

ASG - Chicago - IL

Cylinder Pressure:

2015 PSIG

PGVP Number:

B12012

Valve Outlet:

350

Gas Code:

Analysis Date:

Oct 20, 2012

APPVD

Expiration Date: Oct 20, 2020

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.

Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

ANALYTICAL RESULTS							
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty			
CARBON MONOXIDE	170.0 PPM	167.4 PPM	G1	+/- 1% NIST Traceable			
NITROGEN	Balance						

		C	ALIBRATION STANDARDS	
Type	Lot ID	Cylinder No	Concentration	Expiration Date
NTRM/CO	09060434	CC287237	501.3PPM CARBON MONOXIDE/	Feb 01, 2013
		A	ANALYTICAL EQUIPMENT	
Instrument/Make/Model			Analytical Principle	Last Multipoint Calibration
CO-1 HORIBA VIA-510 TKPPF7FG		TKPPF7FG NDIR		Oct 15, 2012

Triad Data Available Upon Request

Notes:

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PARR Audit

EPA Protocol Gas Mixture

Certified Concentrations

Camponout	ORSNumber	Concentration	Accurac	Procedure Procedure
CARBON MONOXIDE	680-08-0	171.4 PPM	+/-1%	91
NITROGEN	7127-31-8	Balance		

Cylinder Humber: Cylinder Pressure: Certification Date:

CG48846 2015 PSIG Oct 20, 2012 Oct 20, 2020

Expiration Date: Reference Number:

54-124341745-1 E02NI99E15A0083

Part Number: **PGVP Number:**

B12012

Gas Code:

APPVD

Notoe:

Do not use cylinder below 100 psig.

Certification performed in accordance with "EPA Traceability Protocol document EPA 600/R-12/531 (May 2012)" using assay procedures listed.

To reorder this mixture, use Part Number: E02NI99E15A0083

12722 S. Wantworth Ave. . B1 Chicago IL 60628

Precision/Calibration



Expiration Date: Nov 05, 2016

Airgas Specialty Gases

630 United Drive Durham, NC 27713

919-544-3773 Fax: 919-544-3774

www.airgas.com

Part Number:

E02NI99E15A0383

Reference Number:

122-124342451-1

Cylinder Number:

CC421756

Cylinder Volume:

144 Cu.Ft.

Laboratory:

ASG - Durham - NC

Cylinder Pressure:

2015 PSIG

PGVP Number:

B22012

Valve Outlet:

660

Nov 05, 2012

Gas Code:

SO2

Analysis Date:

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.

Do Not Use This Cylinder below 100 pslg, i.e. 0.7 megapascals.

			ANAL	YTICAL RESULT	ГS		
Compo	nent		Requested	Actual	Protocol	Total Relative	
			Concentration	Concentration	Method	Uncertainty	
SULFUR DIOXIDE		15.00 PPM	15.22 PPM	G1	+/- 1% NIST Traceable		
NITROGEN			Balance	Balance			
			CALIBRA	ATION STANDA	RDS	· · · · · · · · · · · · · · · · · · ·	
Type	Lot ID	Cylinder No	Concentra	tion		Expiration Date	
NTRM	100610	CC284538	14.82PPM S	ULFUR DIOXIDE/NITRO	GEN	Jul 13, 2013	
			ANALY	TICAL EQUIPMI	ENT		
Instrum	ent/Make/Mod	el	Analytical	-		Last Multipoint Calibration	
Nicolet 6700 AHR0801333 SO2			FTIR	FTIR		Oct 11, 2012	

Triad Data Available Upon Request

Notes:

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Audi+ Cylinder



Expiration Date: Nov 05, 2016

Airgas Specialty Gases

630 United Drive Durham, NC 27713 919-544-3773 Fax: 919-544-3774 www.airgas.com

Part Number:

E02NI99E15A0383

Reference Number:

122-124342451-1

Cylinder Number:

CC421981

Cylinder Volume:

144 Cu.Ft.

Laboratory:

ASG - Durham - NC

Cylinder Pressure:

2015 PSIG

PGVP Number:

B22012

Valve Outlet:

660

Nov 05, 2012

Gas Code:

SO2

Analysis Date:

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless

otherwise noted. Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

			ANAL	YTICAL RESUL	ΓS	
Compor	nent		Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty
SULFUR DIOXIDE			15.00 PPM	15.13 PPM	G1	+/- 1% NIST Traceable
NITROGEN			Balance			
Туре	Lot ID	Cylinder No	CALIBR Concentra	ATION STANDA	RDS	Expiration Date
NTRM	100610	CC284538	14.82PPM SULFUR DIOXIDE/NITROGEN			Jul 13, 2013
Instrum	ent/Make/Mod	iel	ANALY Analytical	ΓΙCAL EQUIPM Principle	ENT	Last Multipoint Calibration
Nicolet 6700 AHR0801333 SO2			FTIR			Oct 11, 2012

Triad Data Available Upon Request

Notes:

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CERTIFICATE OF ANALYSIS Grade of Product: EPA Protocol

Airgas Specialty Gases

1075 Cinclare Drive

Port Allen, LA 70767 225.388.0900

FAX: 225.388.0959 www.airgas.com

Part Number:

E02NI99E15A0350

Reference Number:

83-124256035-2

Cylinder Number:

CC343761

Cylinder Volume:

144 Cu.Ft.

Laboratory:

ASG - Port Allen - LA

Cylinder Pressure:

2015 PSIG

Analysis Date:

Mar 15, 2011

Valve Outlet:

660

Expiration Date: Mar 15, 2013

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed. Analytical Methodology does not require correction for analytical interferences. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.

Do Not Use This Cylinder below 150 psig.i.e. 1 Mega Pascal

NTRM	08061508	CC254794	94.67PPM SULFUR DIOXIDE/NI* ANALYTICAL EQUIPM		Oct 15, 2012
Туре	Lot ID	Cylinder No	Concentration		Expiration Date
			CALIBRATION STAND	ARDS	
NITROGE	EN-	Bala	nce		
SULFUR				9	The 170 MOLITACEAUE
<u> </u>			0 PPM 48:30 PPM	G1	*+/-1% NIST Traceable
			centration Concentration	Method	Uncertainty
Compor	建筑设施设施 医皮肤的	Red	uested Actual	Protocol	Total Relative
101 10 40 1			ANALYTICAL RESUI	LTS	

ANALYTICAL EQUIPMENT

Instrument/Make/Model

Analytical Principle

Last Multipoint Calibration

Nicolet 6700 AHR0801556 LSO2

FTIR

Feb 18, 2011

Triad Data Available Upon Request

Notes:

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CERTIFICATE OF ANALYSIS Grade of Product: EPA Protocol

Airgas Specialty Gases

1075 Cinclare Drive

Port Allen, LA 70767 225.388.0900

FAX: 225.388.0959 www.airgas.com

Part Number:

E02NI99E80A0202

Reference Number:

83-124256035-3

Cylinder Number:

LL7671

Cylinder Volume:

83 Cu.Ft.

Laboratory:

ASG - Port Allen - LA

Cylinder Pressure:

2215 PSIG

Analysis Date:

Mar 15, 2011

Valve Outlet:

660

Expiration Date: Mar 15, 2013

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Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed. Analytical Methodology does not require correction for analytical interferences. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.

Do Not Use This Cylinder below 150 psig.i.e. 1 Mega Pascal

			ANAL	YTICAL RESUL	TS	
Compor	ient		juested icentration	Actual Concentration	Protocol Method	Total Relative Uncertainty
SULFUR NITROGE		50.0 Bala	0 PPM ince	49.62 PPM	G1	+7. 1% NIST Traceable
Туре	Lot ID	Cylinder No	CALIBR Concent	ATION STANDA	RDS	Expiration Date
NTRM	08061508	CC254794	94.67PPM SULFUR DIOXIDE/NITROGEN		ROGEN	Oct 15, 2012
Instrum	ent/Make/Mode	I		TICAL EQUIPM	ENT	Last Multipoint Calibration
Nicolet 67	700 AHR0801556	LSO2	FTIR			Feb 18, 2011

Triad Data Available Upon Request

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Lab Audit

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CERTIFICATE OF ANALYSIS Grade of Product: EPA Protocol

Airgas Specialty Gases

1075 Cinclare Drive Port Allen, LA 70767 225.388.0900 FAX: 225.388.0959

www.airgas.com

Part Number:

E02NI99E80A0288

SG9115506ALC

Laboratory: Analysis Date:

Cylinder Number:

ASG - Port Allen - LA

Mar 22, 2011

Reference Number:

83-124256035-4A

Cylinder Volume:

83 Cu.Ft.

Cylinder Pressure:

2215 PSIG

Valve Outlet:

660

Expiration Date: Mar 22, 2013

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed. Analytical Methodology does not require correction for analytical interferences. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted. Do Not Use This Cylinder below 150 psig.i.e. 1 Mega Pascal

Gomponent.	ANAI Requested Concentration	YTICAL RESULT Actual Concentration	Protocol	Total Relative Uncertainty
NITRIC OXIDE NITROGEN	50.00 PPM Balance	50.61 PPM	G1	+/- 1% NIST Traceable

Total oxides of nitrogen

50.80 PPM

For Reference Only

CALIBRATION STANDARDS							
Type	Lot ID	Cylinder No	Concentration	Expiration Date			
NTRM	10061119	cc283757	49.73PPM NITRIC OXIDE/NITROGEN	Jul 23, 2016			
			ANALYTICAL EQUIPMENT				
Instrument/Make/Model		1	Analytical Principle	Last Multipoint Calibration			
Nicolet 6700 AHR0801556 LNO		LNO	FTIR	Feb 28, 2011			

Triad Data Available Upon Request

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Airgas Specialty Gases

1075 Cinclare Drive Port Allen, LA 70767 225.388.0900 FAX: 225.388.0959

www.airgas.com

Part Number:

E02NI99E15A0350

Reference Number: 83-124256035-2

Cylinder Number:

CC20611

Cylinder Volume: 144 Cu.Ft.

Laboratory:

ASG - Port Allen - LA

2015 PSIG Cylinder Pressure:

Analysis Date:

Mar 15, 2011

Valve Outlet:

660

Expiration Date: Mar 15, 2013

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed. Analytical Methodology does not require correction for analytical interferences. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted. Do Not Use This Cylinder below 150 psig.i.e. 1 Mega Pascal

				TICAL RESUL			
Compoi	nent		quested incentration	Actual Concentration	Protocol* Method	Total Relative Uncertainty	
			incentiation	concentration.	Method	Officertainty	
SULFUR	DIOXIDE	50.	00 PPM	49.00 PPM	G1	+/-1% NIST Traceable	
NITROGE	≣N	Bal	ance	egysterion (* 1904) Standard State			Santa Santa
	•		CALIBRA	TION STANDA	RDS		
Туре	Lot ID	Cylinder No	Concentra	ation		Expiration Date	
NTRM	08061508	CC254794	94.67PPM	SULFUR DIOXIDE/NITI	ROGEN	Oct 15, 2012	
			ANALYT	ICAL EQUIPM	ENT		
Instrument/Make/Model			Analytical Principle			Last Multipoint Calibration	
Nicolet 6700 AHR0801556 LSO2			FTIR			Feb 18, 2011	

Triad Data Available Upon Request

Notes:

ELDO 502 Precisson



Airgas Specialty Gases

1075 Cinclare Drive Port Allen, LA 70767 225.388.0900 FAX: 225.388.0959 www.airgas.com

Part Number:

E02NI99E15A0350

Reference Number:

83-124256035-2

Cylinder Number:

CC334092

Cylinder Volume:

144 Cu.Ft.

Laboratory:

ASG - Port Allen - LA

Cylinder Pressure:

2015 PSIG

Analysis Date:

Mar 15, 2011

Valve Outlet:

660

Expiration Date: Mar 15, 2013

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed. Analytical Methodology does not require correction for analytical interferences. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.

Do Not Use This Cylinder below 150 psig.i.e. 1 Mega Pascal

NTRM	08061508	CC254794	94.67PPM SULFUR DIOXIDE/	NITROGEN	Oct 15, 2012	
Туре	Lot ID	Cylinder No	Concentration		Expiration Date	
			CALIBRATION STAN	DARDS	•	
IN INCOM	_N	r ile distribution				
NITROGE		Bala				
SULFUR	DIOXIDE	50.0	0 PPM 49 04 PPM	G1	#J-1% NIST Traceable	Day
		Con	centration Concentration	Method	Uncertainty	
Compor	nent	t Req	uested Actual	Protocol	Total Relative	
ANALYTICAL RESIDES						

ANALYTICAL EQUIPMENT

Instrument/Make/Model

Analytical Principle

Last Multipoint Calibration

Nicclet 6700 AHR0801556 LSO2

FTIR

Feb 18, 2011

Triad Data Available Upon Request

Notes:

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CERTIFICATE OF ANALYSIS Grade of Product: EPA Protocol

Airgas Specialty Gases

1075 Cinclare Drive Port Allen, LA 70767

225.388.0900 FAX: 225.388.0959 www.airgas.com

Part Number:

E02NI99E15A0147

Cylinder Number:

CC208157

Laboratory:

ASG - Port Allen - LA

Analysis Date:

Mar 14, 2011

Reference Number:

83-124256035-1

Cylinder Volume:

144 Cu.Ft.

Cylinder Pressure:

2015 PSIG

Valve Outlet:

660

Expiration Date: Mar 14, 2013

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed. Analytical Methodology does not require correction for analytical interferences. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.

Do Not Use This Cylinder below 150 psig.i.e. 1 Mega Pascal

	ANALYTICAL RESULTS	
Component	Requested Actual Pro	tocol Total Relative
	Concentration Concentration Me	thod Uncertainty
NITRIC OXIDE	50.00 PPM 51.78 PPM G1	+/-1% NIST Traceable
	Balance	
NITROGEN	Galaire	

Total oxides of nitrogen

51.81 PPM

For Reference Only

CALIBRATION STANDARDS					
Туре	Lot ID	Cylinder No	Concentration	Expiration Date	
NTRM	10061119	cc283757	49.73PPM NITRIC OXIDE/NITROGEN	Jul 23, 2016	
	·	·	ANALYTICAL EQUIPMENT		
Instrument/Make/Model			Analytical Principle	Last Multipoint Calibration	
Nicolet 6700 AHR0801556 LNO			FTIR	Feb 28, 2011	

Triad Data Available Upon Request

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CERTIFICATE OF ANALYSIS Grade of Product: EPA Protocol

Airgas Specialty Gases

1075 Cinclare Drive

Port Allen, LA 70767 225.388.0900

FAX: 225.388.0959 www.airgas.com

Part Number:

E02NI99E15A0147

Reference Number:

83-124256035-1

Cylinder Number:

CC221153

Cylinder Volume:

144 Cu.Ft.

Laboratory:

ASG - Port Allen - LA

Cylinder Pressure:

2015 PSIG

Analysis Date:

Mar 14, 2011

Valve Outlet:

660

Expiration Date: Mar 14, 2013

660

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed. Analytical Methodology does not require correction for analytical interferences. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.

Do Not Use This Cylinder below 150 psig.i.e. 1 Mega Pascal

ANAL	YTICAL RESULTS **
Component Requested	Actual Protocol Total Relative
Concentration	Concentration Method Uncertainty
NITRIC OXIDE 3 50:00 PPM	50:06 PPM G1 **+/-1% NIST Traceable
MINIOUNDE SOURTIN	SUMMER TO THE SUMMER TO SUMER TO SUMMER TO SUMMER TO SUMER TO
NITROGEN Balance	
CONTRACTOR	CASE DESCRIPTION THE PROPERTY OF THE PROPERTY

Total oxides of nitrogen

50.10 PPM

For Reference Only

CALIBRATION STANDARDS					
Туре	Lot ID	Cylinder No	Concentration	Expiration Date	
NTRM	10061119	cc283757	49.73PPM NITRIC OXIDE/NITROGEN	Jul 23, 2016	
			ANALYTICAL EQUIPMENT		
Instrument/Make/Model			Analytical Principle	Last Multipoint Calibration	
Nicolet 6700 AHR0801556 LNO			FTIR	Feb 28, 2011	

Triad Data Available Upon Request

Notes:

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PARR OAL/Precision

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